

Applicant: John Bergman
Application No.: 10/531,537
Response to Office action dated Jul. 23, 2008
Response filed October 22, 2008

Claim Listing

1–23. (cancelled)

24. (currently amended) A method for the manufacture of a coating for a paper or board web, comprising the steps of:

mixing two or more components in two or more mixing zones arranged in series and/or in parallel, of which at least some of said two or more mixing zones are pressurized at a pressure level about 100 to 1,000 kPa, to thereby form a paper or board web coating.

25. (previously presented) The method of claim 24 wherein the pressure level in a mixing zone of said two or more mixing zones is about 200–500 kPa.

26. (previously presented) The method of claim 24 wherein the components to be mixed are in a pressurized space also at least between the pressurized mixing zones.

27. (previously presented) The method of claim 26 wherein components are supplied to said two or more mixing zones from component feeding pumps, and wherein the mixed components are supplied to a machine container, and wherein a mixing arrangement is used, which is pressurized from the component feeding pumps to the machine container.

28. (previously presented) The method of claim 24 wherein at least one of the components to be mixed is led to the mixing zone through a deaeration means.

29. (previously presented) The method of claim 24 wherein the temperature of the coating is controlled with a temperature control system arranged in connection with one or more mixing zones.

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30. (previously presented) The method of claim 24 wherein the components mixed in one or more mixing zones are fed to a pressure screen.

31. (previously presented) The method of claim 24 wherein the components mixed in one or more mixing zones are fed to a separator, into which an underpressure of approximately 0.5–50 kPa is arranged.

32. (previously presented) The method of claim 31 wherein an underpressure in the separator of approximately 2–15 kPa is arranged.

33. (previously presented) The method of claim 31, wherein from the separator the mixture is transferred for screening and from the screening it is further transferred to a coating station.

34. (previously presented) The method of claim 24 wherein the properties of the mixture and/or a part of the mixture formed by the mixed components are measured with one or more measurement devices arranged after at least one mixing zone.

35. (currently amended) An arrangement in the manufacture of a paper or board web coating from coating components, the arrangement comprising:

means for transferring and mixing paper or board web coating components, wherein the means for mixing the components is arranged to two or more serial and/or parallel mixing zones, of which at least some are pressurized to a pressure level of approximately 100 –1000 kPa.

36. (previously presented) The arrangement of claim 35 wherein into one of the mixing zones a pressure level has been arranged, which is approximately 200–500 kPa.

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37. (previously presented) The arrangement of claim 35 wherein the arrangement is also pressurized between the mixing zones.

38. (previously presented) The arrangement of claim 35 further comprising means for removing and/or reducing air from one or more components being fed to a mixing zone.

39. (previously presented) The arrangement of claim 35 further comprising means for removing air from the mixture, which means comprises a separator, in which an underpressure is arranged, which is approximately 0.5–50 kPa.

40. (previously presented) The arrangement of claim 39 wherein the underpressure arranged in the separator is approximately 2–15 kPa.

41. (previously presented) The arrangement of claim 35, wherein the means for transferring and mixing coating components includes at least one mixer, and the arrangement further comprises at least one temperature control system for adjusting the temperature of the coating being mixed in the mixer.

42. (previously presented) The arrangement of claim 35 further comprising at least one pressure screen for screening the mixture at least after one of said mixing zones.

43. (previously presented) The arrangement of claim 42 wherein the at least one pressure screen is a perforated, slotted or oval screen.

44. (previously presented) The arrangement of claim 42 wherein the at least one pressure screen has a perforation size of approximately 65–300 micrometers.

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45. (previously presented) The arrangement of claim 39 further comprising at least one pressure screen for screening the mixture at least after one of said mixing zones; and
means for transferring the mixture from the separator and/or pressure screen to one or more coating stations.

46. (previously presented) The arrangement of claim 45, further comprising means for measuring the amount of the mixture being transferred to said one or more coating stations by the means for transferring.

47. (previously presented) The arrangement of claim 35 further comprising means and/or the arrangement is connected to means for measuring properties of the mixture formed from mixed components.

48. (previously presented) The arrangement of claim 47, wherein the means for measuring the properties of the mixture formed from mixed components comprises at least one measuring device arranged after at least one mixing zone.

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49. (new) An apparatus for the manufacture of a paper or board web coating from coating components, the apparatus comprising:

- a first mixer with a first mixing zone therein;
- a first conduit communicating with the first mixing zone and transporting thereto a first pigment;
- a second conduit communicating with the first mixing zone and transporting thereto a second pigment, for mixing therein with the first pigment to define a first mixture;
- a second mixer with a second mixing zone therein, the second mixer communicating in series with the first mixer to receive the first mixture therefrom;
- a third conduit communicating with the second mixing zone and transporting thereto a third pigment for mixture with other components therein to define a second mixture, wherein at least some of the first mixing zone and the second mixing zone are pressurized to a pressure level of approximately 100–1000 kPa.

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50. (new) An apparatus for the manufacture of a paper or board web coating from coating components, the apparatus comprising:

- a first mixer with a first mixing zone therein;
- a first conduit communicating with the first mixing zone and transporting thereto a first pigment;
- a second conduit communicating with the first mixing zone and transporting thereto a second pigment, for mixing therein with the first pigment to define a first mixture;
- a second mixer with a second mixing zone therein;
- a third conduit communicating with the second mixing zone and transporting thereto a third coating component;
- a fourth conduit communicating with the second mixing zone and transporting thereto a fourth coating component for mixture therein with the third coating component to define a second mixture; and
- a conduit extending from the first mixer and the second mixer which are arranged in parallel, and communicating with a third mixer, to combine the first mixture and the second mixture within a third mixing zone within the third mixer, wherein at least some of the first mixing zone, the second mixing zone, and the third mixing zone are pressurized to a pressure level of approximately 100–1000 kPa.